Biotic determinants of heterogeneity in a South African savanna

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Propositions accompanying this thesis

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1) There is a need to make explicit statements of scale in any research addressing drivers of and responses to heterogeneity (This thesis, Ritchie 2010, Levick and Rogers 2011, Chase 2014).

2) Small scale biotic and abiotic factors can override larger scale abiotic templates in determining vegetation structural patterns in savannas (Chapter 2, Chapter 5, Cromsigt and Olff 2008, Davies et al. 2014).

3) Termites may be more important than large herbivores in shaping savanna heterogeneity across a range of scales ($<1m^2$ - $>1\ 000km^2$), by virtue of their many functional roles and superior biomass (this thesis, Sileshi et al. 2010, Okullo and Moe 2012, Stoen et al. 2013).

4) Termites may create the initial conditions required to establish grazing lawns, and significantly contribute to their maintenance directly and indirectly, by encouraging increased large herbivore presence and grazing through the addition of limiting micro-nutrients (Chapter 4, Davies et. al in review).

5) Free living microbes may determine termite space use at the individual level and distribution at colony and landscape levels, especially that of the Macrotermitinae in African savannas (Buxton 1981, Holt 1996, Yamada et al. 2007).

6) Termites may be a useful tool in reclaiming degraded, or commercially farmed, areas for savanna conservation (Mando and Miedema 1997).

7) Aardvark may be important keystone species in savannas by asserting top down control on termite and ant populations, and by creating vital refugia for a wide range of species including apex predators (Terborgh et al. 2001, Whittington-Jones et al. 2011).

8) There is a serious need for scientists to recognise and address the research-implementation gap in order for time, energy and money spent on conservation science to translate into action in the real world (Knight et al. 2008, Arlettaz et al. 2010).

9) Entirely out of control, the human technomachine guzzles and lurches and vomits and rips its random crazy course over the face of the planet, as some filthy barbaric fist grips its profit margins and hoards its accumulating capital (adapted from Livingston 1981).

10) ”Time is a mother’s enemy” (Anita Diamant, The Red Tent).